Tennessee's Behavioral Risk Factor Survey

2001

July 2004

The Behavioral Risk Factor Surveillance System is a state-based computer-assisted telephone interviewing effort conducted in cooperation with the Centers for Disease Control and Prevention. Since 1984, surveys of adults from randomly selected households throughout the state have been done every month. Questions are constructed to determine the behaviors of individuals that will affect their risk of developing chronic diseases that may lead to premature mortality and morbidity. The data collected helps to identify high risk populations that can be targeted for intervention programs. The data can also be used to track changes over time of prevalence of risk factor behaviors and related diseases, and can assess the impact of health promotion and prevention intervention programs. Currently, every state in the country, the District of Columbia, and three U.S. territories are members of this surveillance system.

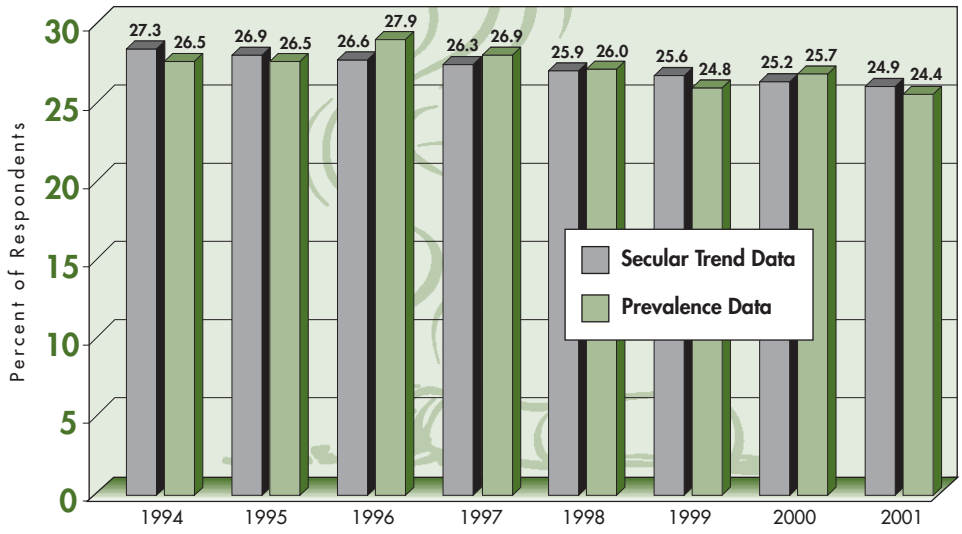
Tennessee currently conducts approximately 3,000 interviews annually. During 2001, approximately 20,250 unique telephone numbers and over 58,000 call attempts to those numbers were required to complete these interviews. *Tennessee's Behavioral Risk Factor Survey 2001* examines the results of some of the survey questions, and the trends for specific risk factors for the period 1994-2001.

Beginning in 1999, the Centers for Disease Control and Prevention redefined its demographic classification scheme to include the ethnicity factor of Hispanic or non-Hispanic origin in its data collection and presentations. The new definitional classification is now slightly different from the demographic classification used in previous editions of this report. Where before we analyzed and presented data according to the broad categories of white male, white female, nonwhite male and nonwhite female, we are now using the categories of non-Hispanic white male, non-Hispanic white female, Hispanic or nonwhite male, and Hispanic or nonwhite female. The new classification scheme is basically a change in terminology and does not significantly differ technically from the previous classification breakdown used. This report will be analyzing and presenting data according to these new categories. Care should be exercised in the comparison between data from this edition of this report and previous editions.

Please bear in mind that the percentage estimates presented in the following tables represent point estimates made from sample data. As such, they are associated with a certain degree of random variation which must be taken into consideration in viewing and interpreting the data. The comparison of the percentages of the various risk factors and their differences by demographic characteristics may or may not be of valid concern without taking into consideration the confidence intervals about the percentages and their differences and whether or not these differences were statistically significant. The previous edition of this report interpreted many of these differences with respect to statistical differences (alpha=0.05) in detail. Although some demographic difference may be noted in the discussion of these data, it is not the intent to repeat this type of analysis in this edition. Rather, the analytical emphasis placed in interpreting the data in this report will be in looking at the time series of the various selected behavioral risk indicators from 1994 through 2001 to note if any discernible change or upward or downward trend has occurred over this time period, especially with respect to any change being statistically significant. The methodological approach will be to apply a linear regression model to the time series data for each of the selected risk factors being reviewed and noting the direction of the slope coefficient so derived, particularly with respect to the strength of this relationship. A statistically significant trend relationship will be defined when the slope coefficient is statistically significantly different from zero at the 95 percent (alpha=0.05) confidence level.

Tobacco use is the most preventable cause of premature mortality and morbidity in the United States and Tennessee. According to the survey, non-Hispanic white males overall reported the highest smoking prevalence rates for five of the last eight years presented. Hispanic or nonwhite females consistently had the lowest smoking prevalence rates over this time period. Analysis of trend data showed that overall there was a statistically significant downward trend (slope=-0.34, p=0.0338) for the population as a whole. This is a very positive indication that some noticeable progress has been made in the reduction of the prevalence of smoking in Tennessee during the period of 1994-2001.

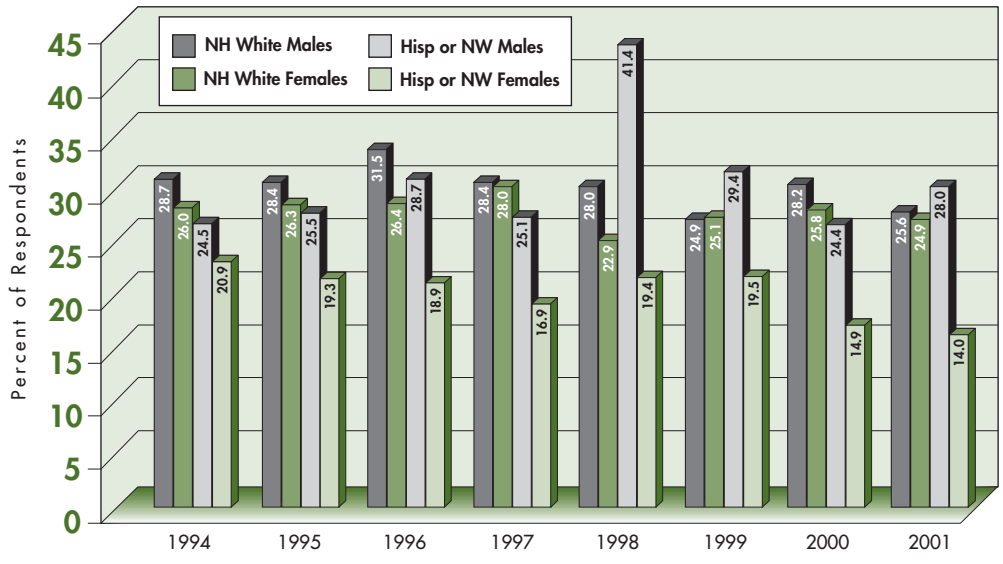
DATA FOR THE PREVALENCE AND SECULAR TREND OF CURRENT SMOKING FOR THE TOTAL POPULATION, TENNESSEE 1994-2001



However, Tennessee's current smoking prevalence rate of 24.4 percent in 2001 is still well above the *Healthy People 2010 Objective* of 12.0 percent. Should the current trend of smoking prevalence in Tennessee continue, a prevalence rate of 21.5 percent would be forecast for 2010. So while measurable progress is being made for this risk factor in Tennessee, it will still fall short of the objectives set for the rest of the nation.

In analyzing the trend data for the more detailed demographic sub-classifications of the population for this risk factor, it was noted that smoking prevalence for Hispanic or nonwhite females likewise showed a statistically significant downward trend (slope= -0.79, p=0.0206) over this time period. While smoking prevalence data for non-Hispanic white males and non-Hispanic white females showed downward trends, the indicators of these trends were not sufficient to deem them to be statistically significant. Smoking prevalence data for Hispanic or nonwhite males, however showed an upward trend for this demographics category. Although this trend was not statistically significant, it does warrant some additional scrutiny and concern.

PERCENT OF RESPONDENTS WHO REPORTED CURRENT SMOKING BY RACE AND GENDER, TENNESSEE 1994-2001

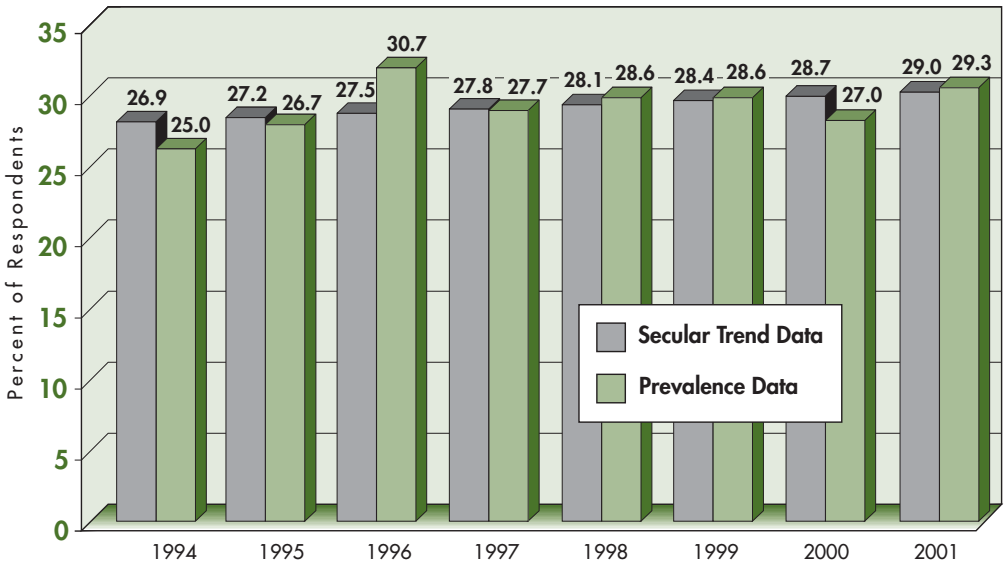


A closer examination of the data reveals that this increasing trend in smoking prevalence for Hispanic or nonwhite males is due in a large part to the high prevalence rate reported for this demographic subgroup in 1998. The prevalence rate of 41.4 percent was much higher than that of previous and subsequent years. This was noted in previous editions of this report. While this data value for 1998 appears to be inconsistent with similar data for the years covered in this study, it was verified to be the correct data reported from the Centers for Disease Control and Prevention. The reason for this unusually high, inconsistent value remains unknown.

Even ignoring this value, the prevalence rates for the latter part of this time period remain

as high or even higher than the beginning part of this period. One can reasonably assume that while there appears to be general progress in reducing the prevalence of smoking in the population overall, little or no progress has been made in the particular cohort of Hispanic or nonwhite males during the time period of 1994-2001. This would suggest that this cohort would be a likely target group for any future behavioral change programs or efforts. The prevalence of smoking for all demographic groups is well above the year *Healthy People 2010 Objective* of 12 percent.

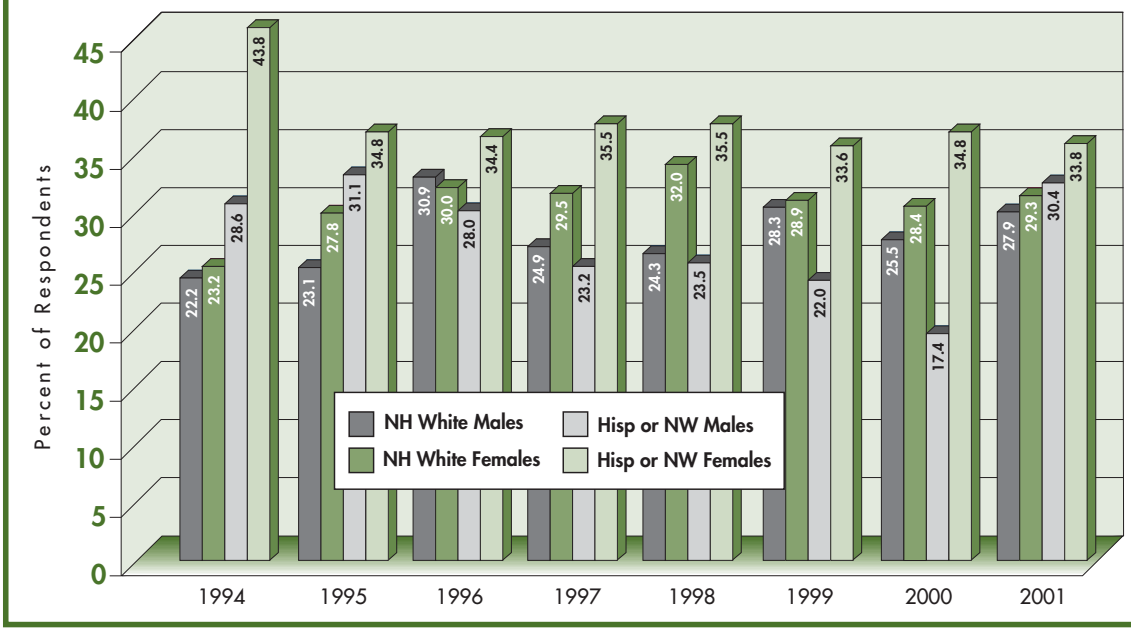
DATA FOR THE PREVALENCE AND SECULAR TREND OF HYPERTENSION AWARENESS FOR THE TOTAL POPULATION, TENNESSEE 1994-2001



Uncontrolled hypertension is a well-known risk factor for cardiovascular, cerebrovascular, and end-stage renal diseases. According to the survey, Hispanic or nonwhite females had the highest percentage of hypertension awareness respondents over the period 1994-2001. The other demographic categories appear to have fluctuated randomly with respect to one another. Analysis of trend data showed that while there was, overall, modest upward trend in the percent of the total population who were aware of their hypertension, this trend was not statistically significant. The same was true for the demographic categories of non-Hispanic white males, non-Hispanic white females, and Hispanic or nonwhite males. Hispanic or nonwhite females showed a very slight non-statistically significant downward trend. This was no doubt due to the high hypertension awareness percentage of 43.8 recorded in 1994. Data for subsequent years hovered between 33 to 35 percent for this demographic subcategory.

Hypertension awareness has changed little if any over the time period 1994-2001. It remains above the *Healthy People 2010 Objective* for this risk factor of 16 percent.

PERCENT OF RESPONDENTS WHO REPORTED HYPERTENSION AWARENESS, BY RACE AND GENDER, TENNESSEE 1994-2001



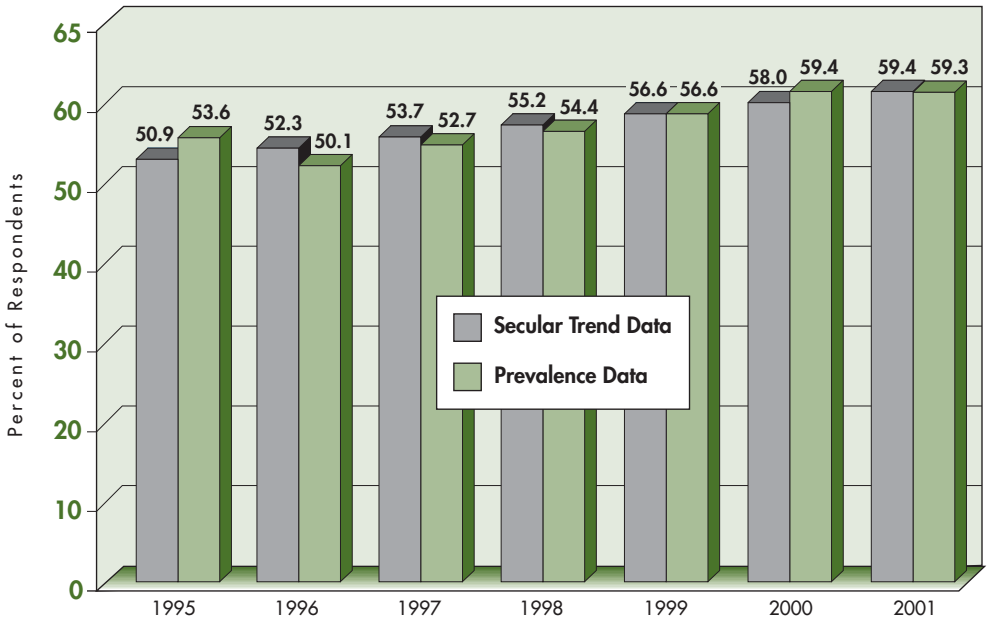
Being overweight/obese is a risk factor for heart disease, cancer, stroke, and diabetes. According to the Behavioral Risk Factor Survey, the non-Hispanic white female population had lower overweight/obesity rates than those of the other demographic subgroups over the time period 1995-2001. Data for this risk factor was not available for 1994.

Overweight/obese is defined to include all respondents to weight and height questions

that had a computed body mass index greater than or equal to 25.

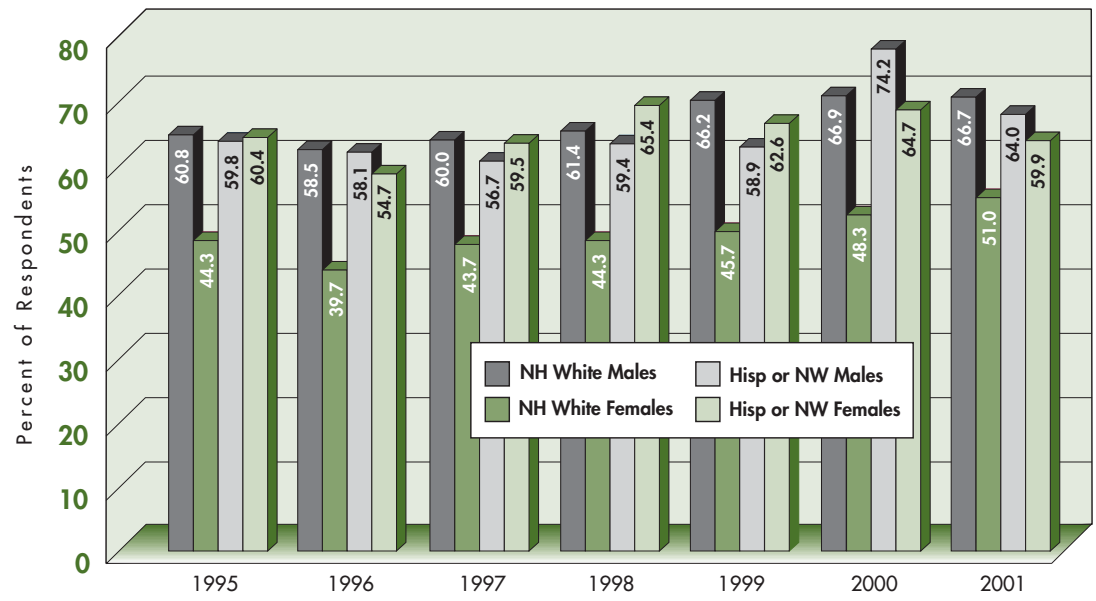
Analysis of trend data showed that overall there was a statistically significant upward trend (slope=1.41, p=0.0085) for the population as a whole. Analysis of trend data for the demographic categories of the population for this risk factor showed that there was a statistically significant upward trend in the prevalence of overweight/obesity for non-Hispanic white males (slope=1.45, p=0.0083) and non-Hispanic white females (slope=1.40, p=0.0171). The analysis further indicates that this association is very strong. Hispanic or nonwhite males and Hispanic or nonwhite females showed upward, but not statistically significant, trends. There appears to be a very strong indication that the overweight/obesity prevalence has definitely increased over the time period 1995-2001, and this increase has occurred primarily in the non-Hispanic white population. The prevalence of being overweight/ obese for the total population was 59.3 percent in 2001. If the current trend continues as it has in the immediate past, subsequently an overweight/obesity rate of 72.1 percent would be forecast for 2010. The behavioral risk factor of overweight/obesity continues to remain an increasing public health concern in Tennessee.

DATA FOR THE PREVALENCE AND SECULAR TREND OF THE TOTAL POPULATION WHO REPORTED OVERWEIGHT/OBESITY*, TENNESSEE 1995-2001



*Includes all respondents to weight and height questions that had a computed body mass index greater than or equal to 25.0.

PERCENT OF RESPONDENTS WHO REPORTED OVERWEIGHT/OBESITY* BY RACE AND GENDER, TENNESSEE 1995-2001



*Includes all respondents to weight and height questions that had a computed body mass index greater than or equal to 25.0.

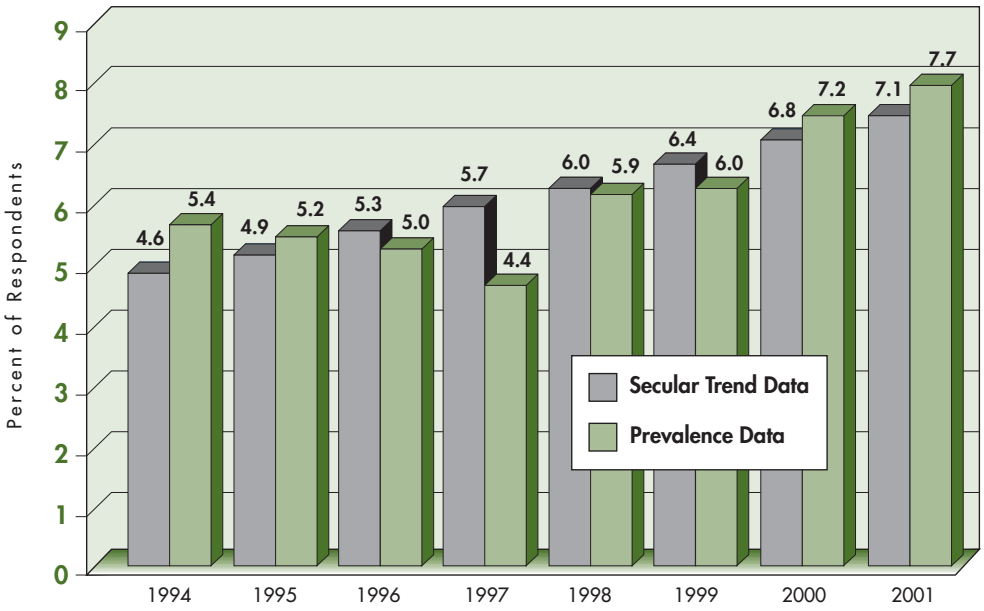
Diabetes is a chronic metabolic disease. In 2001, it was the seventh leading cause of death in Tennessee and a contributing cause for various other deaths including cardiovascular disease. According to the survey, Hispanic or nonwhite females consistently reported the highest prevalence rates for each of the years during the 1994-2001 period. The other demographic categories appeared to fluctuate randomly in relation to one another. Trend analysis showed that overall there was a statistically significant upward trend

(slope=0.36, p=0.0178) for the population as a whole. This is a strong indication that prevalence of diabetes has been increasing over the time period 1994-2001.

The current rate in Tennessee of 7.7 percent in 2001 is well above the year *Healthy People 2010 Objective* for diabetes of 25 per 1,000 persons or 2.5 percent. This relationship only appears to be worsening. Should the current upward trend continue as it has been in the recent past, a prevalence rate of 10.4 would be forecast for 2010.

In analyzing the trend data for the more detailed demographic subclassifications of the population for this risk factor, it was noted that diabetes prevalence for non-Hispanic white males and non-Hispanic white females showed statistically significant upward trends (slope=0.50, p=0.0161) for non-Hispanic white males and (slope=0.35, p=0.0062) for non-Hispanic white females. The trend for Hispanic or nonwhite males, and females fluctuated throughout the period 1994-2001. Neither the Hispanic or nonwhite males or females showed any statistical significance. The increase in the prevalence of diabetes appears to be more pronounced in the non-Hispanic white race/ethnicity groups. The prevalence of diabetes is a behavioral risk factor which is currently on the increase and remains of continuing public health concern.

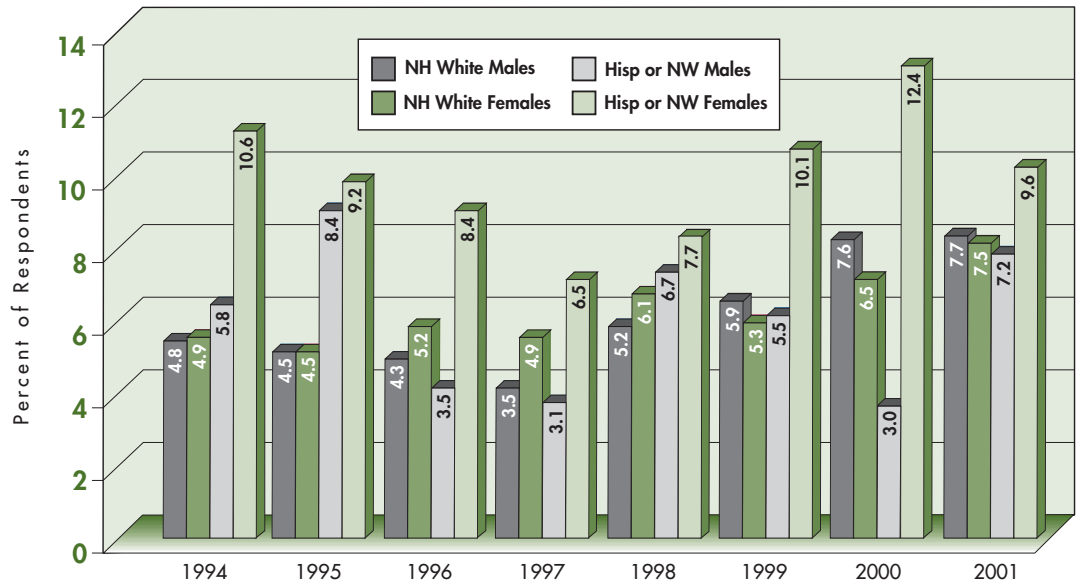
DATA FOR THE PREVALENCE AND SECULAR TREND OF THE TOTAL POPULATION WHO REPORTED DIABETES*, TENNESSEE 1994-2001



*Doctor diagnosed diabetes.

The Behavioral Risk Factor Survey interviews respondents regarding their self-reporting health status, and collects information on those reporting fair or poor health. No discernable differences in the percentage of respondents who reported fair or poor health by demographic categories were noted. Analysis of trend data showed that overall there was a slight upward trend over the time period 1994-2001, however, this trend was not statistically significant. Analysis of trend data for each of the more detailed demographic categories of the population indicated the same result: a slightly upward non-statistically significant trend. Thus, there appears to be little if any change in the percent of respondents who reported fair or poor health over the period 1994-2001.

PERCENT OF RESPONDENTS WHO REPORTED DIABETES*, BY RACE AND GENDER, TENNESSEE 1994-2001



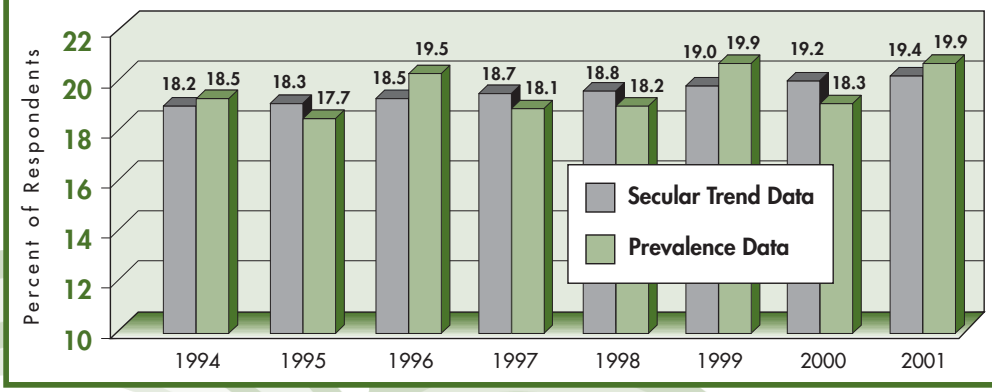
*Doctor diagnosed diabetes.

Good nutrition is a good health habit for promoting a healthy life and a preventive lifestyle. The percent of the population who reported they consumed five or more fruits and vegetables per day was surveyed every other year from 1994-2000 before being surveyed annually starting in 2001. Therefore, there is only data available for 1994, 1996, 1998, 2000, and 2001.

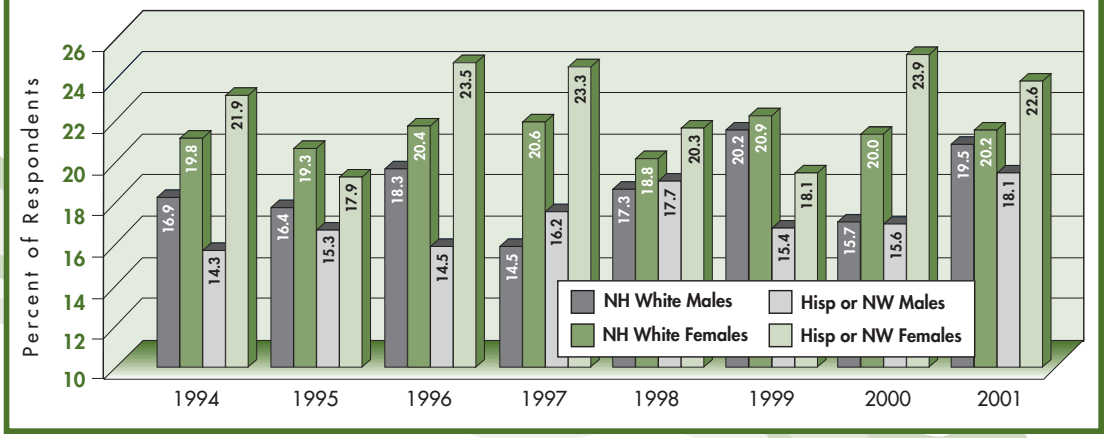
In general, the survey showed that the non-Hispanic white population, both male and female, appeared to have had the highest percentage of the population reporting that they consumed five or more fruits and vegetables daily for most of the years presented during the time period 1994-2001. Due to the lack of complete data over this time period, no formal analysis discussion will be presented. In viewing the data, however, it appears that the percentage of respondents who reported that they consumed five or more fruits and vegetables per day has been steadily increasing throughout the period 1994-2001. This observation applies not only to the population as a whole but to each demographic subcategory as well. This behavioral risk factor seems to be moving in a positive direction and improving over time.

Having a mammogram is a very important and highly effective diagnostic screening procedure in the early detection and prevention of breast cancer, especially in women age 50 and over. Of the population surveyed over 1994-2001, there was very little discernible difference between the two demographic racial/ethnicity groups in the percent of women 50 years of age and older who reported having had a

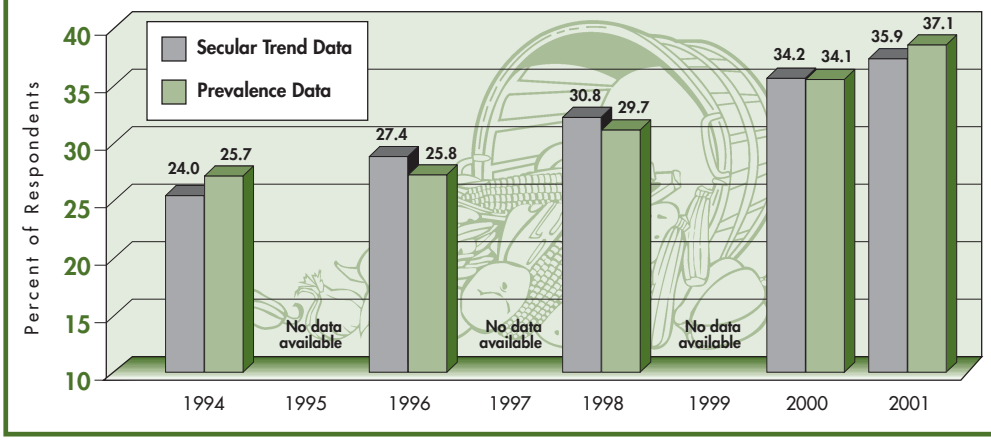
DATA FOR THE PREVALENCE AND SECULAR TREND OF THE TOTAL POPULATION WHO REPORTED FAIR OR POOR HEALTH, TENNESSEE 1994-2001



PERCENT OF RESPONDENTS WHO REPORTED FAIR OR POOR HEALTH, BY RACE AND GENDER, TENNESSEE 1994-2001



DATA FOR THE PREVALENCE AND SECULAR TREND OF THE TOTAL POPULATION WHO REPORTED THEY CONSUMED FIVE OR MORE FRUITS AND VEGETABLES PER DAY, TENNESSEE 1994-2001

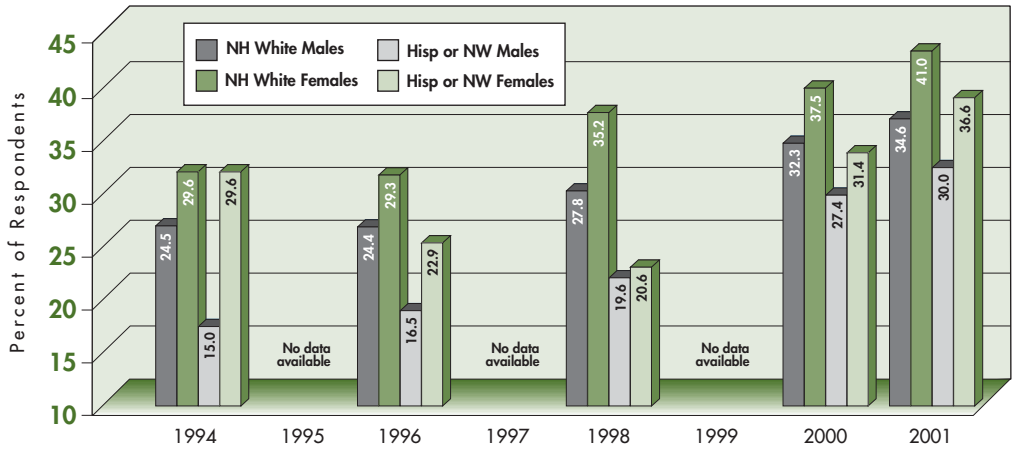


mammogram within the previous two years. The fluctuation in percentage rates appeared to be fairly random between the two groups.

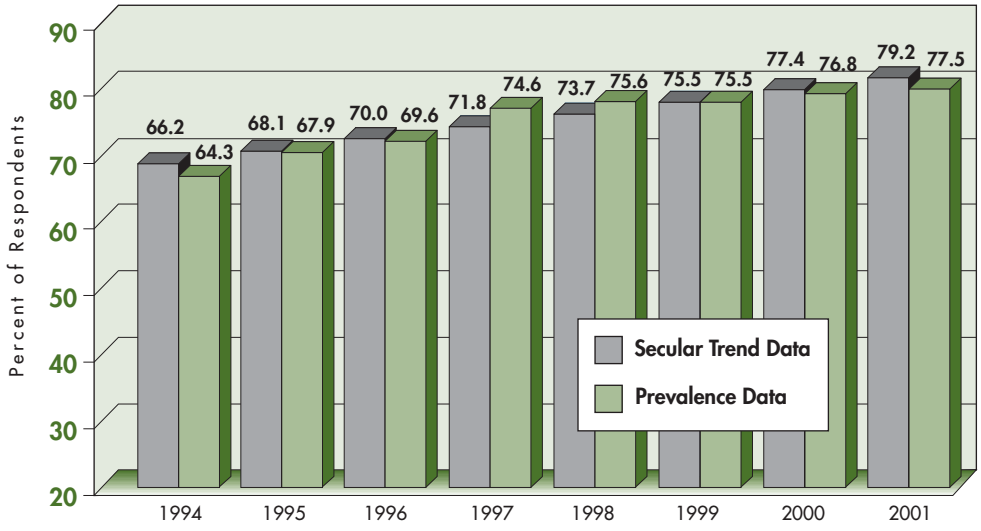
Analysis of trend data showed that overall there was a statistically significant upward trend in the percent of women having a mammogram within the last two years (slope=1.85, p=0.0005). This was also true for the race/ethnicity categories for this behavioral risk factor. Both non-Hispanic white females (slope=1.82, p=0.0015) and Hispanic nonwhite females (slope=1.97, p=0.0207) had statistically significant upward trends. Should this current trend for women age 50 and older having a mammogram within the past two years continue, a prevalence rate of 95 percent would be forecast for 2010. This appears to be a very positive finding for this risk factor.

Physical activity and fitness are good health habits for promoting a healthy life and a preventive lifestyle. The percent of the population who reported no physical activity was surveyed in 1994 and in 1996 through 2001. Of the population surveyed during these time periods, females of both race/ethnicity categories reported a higher percentage of physical inactivity than males. More detailed data not presented here indicated that physical activity decreased with age. Analysis of trend data showed that overall there was a downward trend in the percent of respondents who reported no leisure time physical activity during the time period 1994-2001. However, this trend was not statistically significant. Analysis of trend data for each of the more detailed demographic

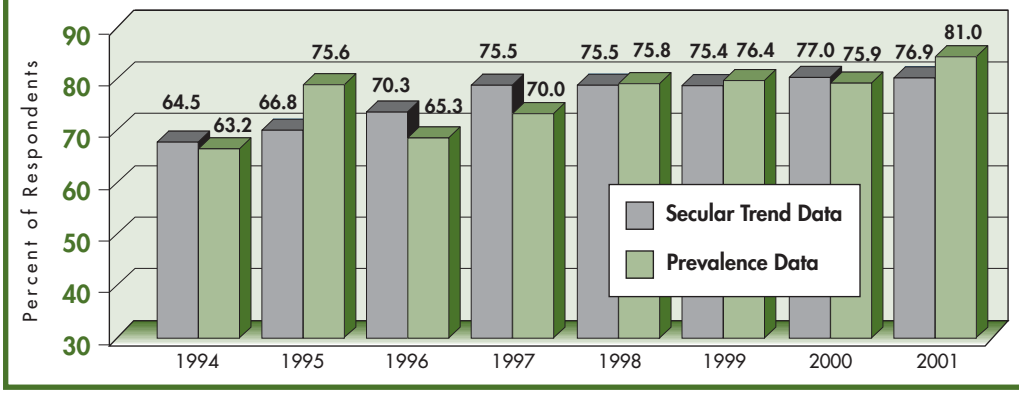
PERCENT OF RESPONDENTS WHO REPORTED THEY CONSUMED FIVE OR MORE FRUITS AND VEGETABLES PER DAY BY RACE AND GENDER TENNESSEE 1994, 1996, 1998, 2000, 2001



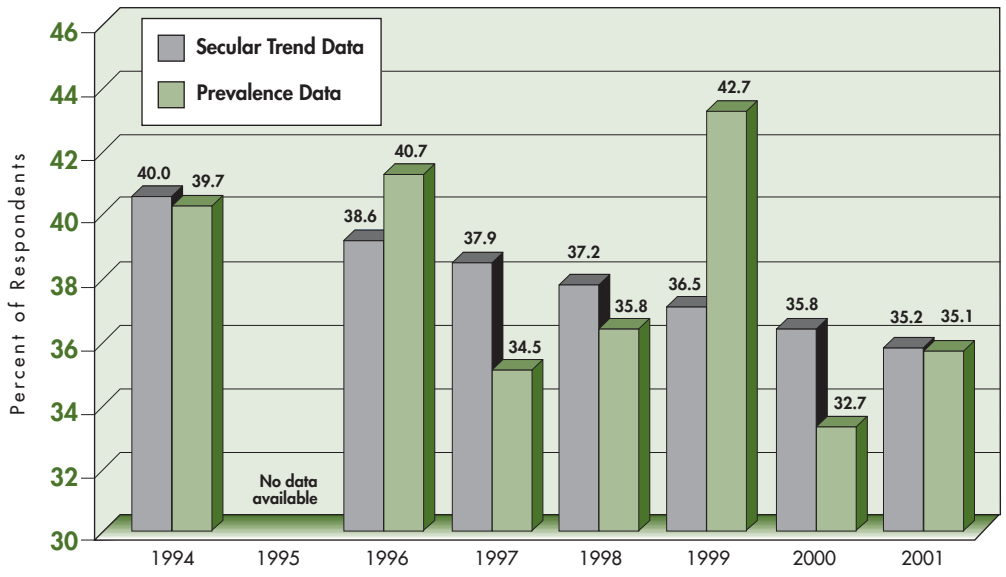
DATA FOR THE PREVALENCE AND SECULAR TREND OF THE TOTAL WOMEN RESPONDENTS AGED 50 AND OLDER WHO HAD A MAMMOGRAM WITHIN THE LAST TWO YEARS, TENNESSEE 1994-2001



PERCENT OF WOMEN RESPONDENTS AGED 50 AND OLDER WHO HAD A MAMMOGRAM WITHIN LAST TWO YEARS, BY RACE, TENNESSEE 1994-2001



DATA FOR THE PREVALENCE AND SECULAR TREND OF NO PHYSICAL ACTIVITY FOR THE TOTAL POPULATION, TENNESSEE 1994-2001



categories of the population indicates similar results. All demographic categories show a downward trend. Only for non-Hispanic white males was this downward trend statistically significant (slope=-1.44, p=0.0352). While the strength of this association is not definitively strong, the direction of a possible trend appears to be very positive for this behavioral risk factor. It is hoped that people are becoming aware of the benefits of physical activity and fitness. The 2010 *Healthy People Objective* is to reduce the percent of adults who engage in no leisure-time physical activity to 20 percent. The current percentage in Tennessee in 2001 for the population as a whole is 35.1, well above this objective.

To increase the span of healthy life is a challenge for health officials in Tennessee as well as the nation. Health promotion strategies can play an important role in influencing personal choices for good health habits and preventative lifestyles. Prevention intervention programs to promote physical activity and fitness, good nutrition, and early cancer detection, along with programs to educate the population about the health risks of diabetes, tobacco, alcohol, drugs, and a sedentary lifestyle, are important tools toward increasing years of healthy life. The Behavioral Risk Factor Surveillance System can assist in identifying those individuals in need of community-based programs that promote healthy lifestyles, and programs that provide education to reduce the risk of heart disease, cancer, and other diseases that could lead to premature mortality.

(Prevalence Data – The percent of a population that is affected with a particular condition at a given time.

Secular Trend Data – Data relating to a continuing period of time.)

Please visit the Tennessee Department of Health website: www.tennessee.gov/health

Tennessee's Behavioral Risk Factor Survey 2001 **was published by the Tennessee Department of Health, Division of Health Statistics, Cordell Hull Building, Nashville, Tennessee, 37247-5262**

Marguerite Lewis, Director

For additional information please contact: David Ridings, (615)741-1954

Tennessee Department of Health. Authorization No. 343166, 425 copies. This public document was promulgated at a cost of $1.51 per copy. (6-04)

PERCENT OF RESPONDENTS WHO REPORTED NO PHYSICAL ACTVITY, BY RACE AND GENDER, TENNESSEE 1994-2001